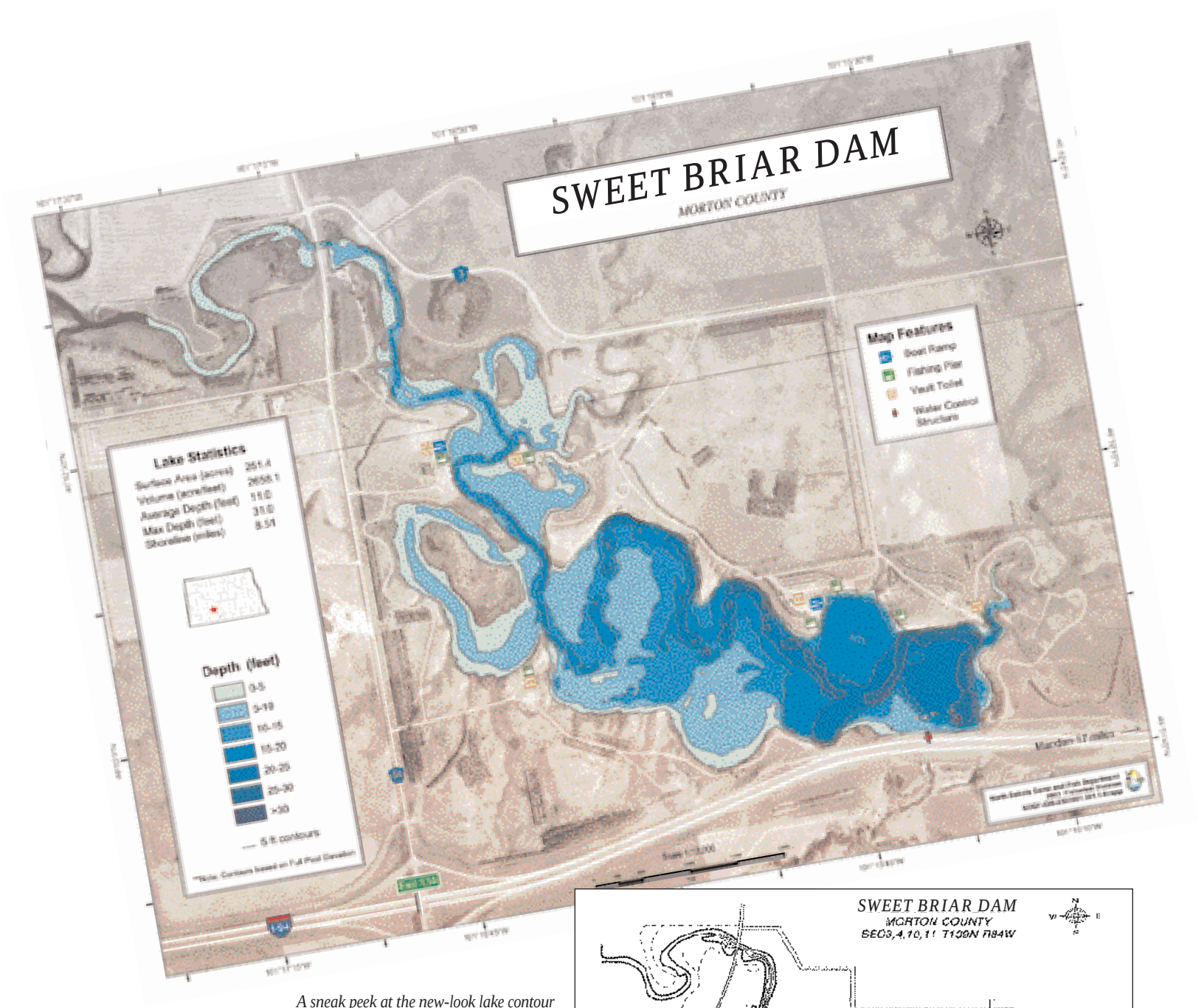

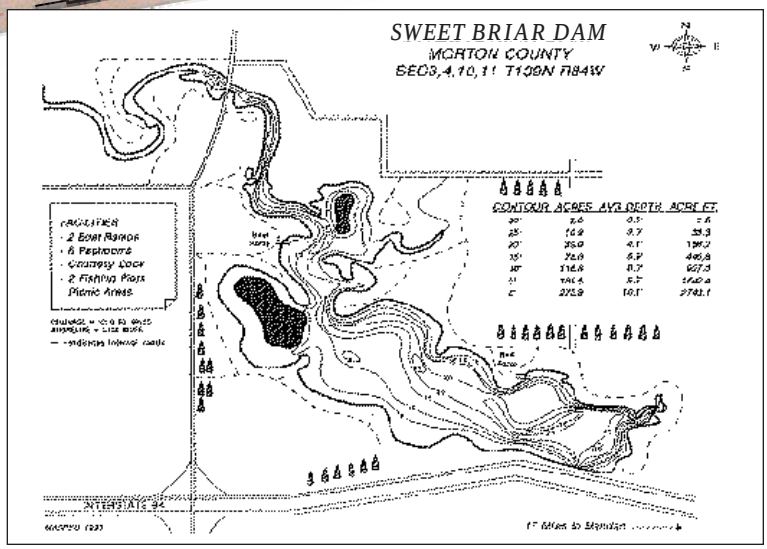

A sneak peek at the new-look lake contour maps, above, produced by North Dakota Game and Fish Department personnel. The old maps, right, become a thing of the past.

UNDERWATER PROFILES

By Ron Wilson

For 300-plus hours in 2003, Ryan Krapp slowly motored in deliberate patterns around dozens of North Dakota waters. To onlookers, he could've easily been mistaken for a guy searching for something of value accidentally kicked overboard. Unhurried – from June until mid-October – he went around and around …

Turns out, he hadn't lost anything, but found plenty – sunken islands, humps and old channels – missing from old lake contour maps. Before Krapp, it had been about 30 years since the depths of most of North Dakota's fishing waters had been measured. "In some instances, there is a world of difference between what's found on maps done today and those done in yesteryears," said Krapp, North Dakota Game and Fish Department lake mapping specialist.

As there should be, considering the high-tech, highly-accurate tools scientists are employing today to bathymetrically survey waters. The days of taking measurements by flasher and stopwatch, and then hand-drawing contour lines on a map, are behind us.

Krapp uses a GPS – accurate to within a few centimeters – and depth sonar linked to an onboard laptop computer. As he motors around the lake, underwater sonar and satellite GPS readings taken every second are collected via mapping software in the laptop, creating a database. This information is then fed into another computer program back at the office where the contour maps are eventually generated.

That's simplifying the process a bunch, but the important thing is the final product: A graduated, color contour lake map, with an aerial photograph background. Boat ramp, vault toilet and fishing pier locations are also included. "The old maps were good for their day, but the new ones are much more accurate," said Scott Elstad, Game and Fish Department aquatic habitat coordinator. "As far as showing the contours, old channels, stream beds … the new maps are vastly improved."

Some of the new maps also reveal a few surprises. "On the Sweet Briar Dam (in Morton County) map, for example, you'll now see some islands that didn't show up on the old map," Elstad said.

In 2003, Krapp collected mapping data from about 60 North Dakota waters, with plans to again survey nearly as many in 2004. "The Game and Fish manages over 300 lakes and the goal is to get as many mapped as we can," he said.

Many waters, including some of the bigger reservoirs like Jamestown and Ashtabula, have never been mapped. "It will be very interesting for us and for sportsmen and women," Elstad said. "We all will finally have something to refer to when it comes to these waters."

The new maps, about 60 of them, will be available free on the Game and Fish Department's website (www.discovernd.com/gnf) sometime in early summer. Until then, more than 150 of the older maps can be found on the website under the "Fishing" link, where they can be viewed on-screen or printed with most ink-jet or laser printers.

The maps are expected to aid Department personnel in managing North Dakota's fisheries, while providing anglers with a better picture of what's hidden beneath their boats. "These new maps will show contours, deep holes, cool fishing spots never revealed before," said Jerry Weigel, Department fisheries production/development section supervisor.

Photo Omitted

Elstad, who heads the Department's Save Our Lakes program, said he'll be able to compare new maps with the old to get an idea of water volume some lakes have lost after years of acting as catch-alls for tons of sediment. "It will make it easier to identify those areas that are silted in and need to be cleaned out, creating habitat for fish and better access for anglers," he said. "In some cases, we have lost 10-12 feet in places.

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The Department's SOL program emphasizes projects that reduce the amount of unwanted nutrients and sediments running into state waters.

The new maps will also prove useful to fisheries managers in other ways. "Down the road for some of the bigger systems we'll have more accurate shoreline information, which will make choosing boat ramp sites a simpler process," Weigel said. "What we'll be able to do is follow the shoreline on the map to see where the slope on shore is right for a boat ramp. It will save from having to send someone out to the lake and searching for the right spot."

Brian Hosek, Department GIS specialist, wrote the computer program that creates the lake bottom surface and contours. "Ryan comes back to the office with basically a bunch of points, each with its own GPS position and depth, scattered about," he said, "and the software is able to run contour lines from those depths. It's not an exact interpretation of what the bottom is like, but it's a lot closer than what we've ever had before."

The maps are angler friendly as they are bordered by latitude and longitude coordinates, providing references for locating positions on the map. Like, say, a hump or dip in the lake where the walleye were cooperating yesterday for a fishing buddy. You can locate these fishing spots by using the reference points just like if you were trying to find Minot, for example, on a state highway map – put a finger on "E" on the left border of the map and a finger on "10" at the top of the map, and slide them until they meet at the Magic City.

Before Krapp set out to survey as many waters as possible for the Game and Fish, he began in 2001, as part of a graduate degree study through the University of North Dakota, by surveying Devils Lake. Through his work, Krapp was able to determine how much land per year had been inundated by an expanding Devils Lake. His study was funded by the Department. "In the last three years, I've spent more time on the water than most people do in their lifetimes," he said.

As soon as the ice goes out in spring, Krapp will continue to add to his list of lakes until conditions force him indoors in fall. "I could try to work up some sob story about being on the water 10-12 hours a day in all kinds of weather, but I can't," he said. "I get to be outside and on the water. There are worse jobs."

RON WILSON is editor of North Dakota OUTDOORS.

Ryan Krapp, North Dakota Game and Fish Department lake mapping specialist, spent hundreds of hours in 2003 surveying the depths of dozens of North Dakota waters.

Ryan Krapp